

COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF HEALTH

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OFFICE OF RADIOLOGICAL HEALTH  
109 Governor Street, 7<sup>th</sup> Floor, Richmond, Virginia 23219  
Office (804) 864-8150  
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**ENVIRONMENTAL  
RADIATION  
MONITORING  
PROGRAM**

**2016  
3<sup>rd</sup> QUARTER REPORT**



COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF HEALTH

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# Sampling Locations

# Sampling Locations for Surry Nuclear Power Station



Photo courtesy of Dominion Power

LOCATION	TYPE	FREQUENCY
<b><u>Milk</u></b>		
M-66 Surry County - W.B. Epps Dairy	Raw	Quarterly
<b><u>Air</u></b>		
A-20 Surry Power Station	Air Particulate	Weekly
A-44 Jamestown State Park - Historical Site	Air Particulate	Weekly
<b><u>Charcoal Filter</u></b>		
C-20 Surry Power Station	Release Gas	Weekly
C-44 Jamestown State Park - Historical Site	Release Gas	Weekly
<b><u>Dosimeters</u></b>		
D-20 Surry Power Station	Gamma in Air	Quarterly
D-41 Surry Lebanon Baptist Church	Gamma in Air	Quarterly
D-42 Surry County - Lawnes Creek	Gamma in Air	Quarterly
D-43 Surry County - Route 628	Gamma in Air	Quarterly
D-44 Jamestown State Park - Historical Site	Gamma in Air	Quarterly
D-45 Newport News - Lee Hall	Gamma in Air	Quarterly
D-73 Naval Weapons Station - Enlisted Quarters	Gamma in Air	Quarterly
D-76 Newport News - Fort Eustis	Gamma in Air	Quarterly
D-77 Williamsburg - Busch Gardens	Gamma in Air	Quarterly
D-78 Williamsburg - Williamsburg Airport	Gamma in Air	Quarterly
D-79 Surry County - Scotland Wharf	Gamma in Air	Quarterly
D-80 Surry County - Bacon's Castle	Gamma in Air	Quarterly
D-81 Surry County - Alliance	Gamma in Air	Quarterly
D-82 Surry County - Hog Point	Gamma in Air	Quarterly
<b><u>Silt</u></b>		
S-17 James River - 1/2 Mile Off Discharge Canal	Silt	2x per year
<b><u>Fish</u></b>		
F-17 James River - 1/2 Mile Off Discharge Canal	Edible Fish	2x per year
R-17 James River - Various Locations	Shellfish	Annually
<b><u>Surface Water</u></b>		
W-19 Surry Discharge Canal	Surface Water	Weekly
W-79 James River - Scotland Wharf	Surface Water	Weekly
W-79A / W-90 James River - Robious Landing	Surface Water	Weekly
<b><u>Vegetation</u></b>		
V-96D Surry County - local farms	Edible Vegetation	2x per year

# Sampling Locations for North Anna Nuclear Power Station



Photo courtesy of Dominion Power

LOCATION	TYPE	FREQUENCY
<b><u>Milk</u></b>		
M-29 Louisa County - Lakeside Dairy	Raw	Quarterly
<b><u>Air</u></b>		
A-88 Louisa County Route 700/North Anna Power Station	Air Particulate	Weekly
A-86 Louisa County – Bumpass Volunteer Fire	Air Particulate	Weekly
<b><u>Charcoal Filter</u></b>		
C-88 Louisa County Route 700/North Anna Power Station	Release Gas	Weekly
C-86 Louisa County – Bumpass Volunteer Fire	Release Gas	Weekly
<b><u>Dosimeters</u></b>		
D-35 NAPS	Gamma in Air	Quarterly
D-50 Louisa County – Mineral	Gamma in Air	Quarterly
D-51 Louisa County - Wares Crossroads	Gamma in Air	Quarterly
D-52 Spotsylvania - Good Hope Church	Gamma in Air	Quarterly
D-53 Spotsylvania - Route 614	Gamma in Air	Quarterly
D-54 Louisa County - Frederick's Hall	Gamma in Air	Quarterly
D-84 Louisa County - Route 685	Gamma in Air	Quarterly
D-85 Spotsylvania Co. - Route 713	Gamma in Air	Quarterly
D-86 Louisa County – Bumpass Volunteer Fire	Gamma in Air	Quarterly
D-87 Spotsylvania Co. - Levy	Gamma in Air	Quarterly
D-88 Louisa Co. - Rt. 700 (near station)	Gamma in Air	Quarterly
D-89 Louisa County - Aspen Hill	Gamma in Air	Quarterly
<b><u>Fish</u></b>		
F-24 North Anna Lake - THIRD Cooling Lagoon	Edible Fish	2x per year
<b><u>Soil</u></b>		
S-24 NAPS Waste Treatment shoreline soil	Soil	2x per year
<b><u>Surface Water</u></b>		
W-27 Lake Anna - Route 522	Surface Water	Weekly
W-33 North Anna Discharge Canal	Surface Water	Weekly
W-28 North Anna River @ Rte. 651	Surface Water	Weekly
<b><u>Vegetation</u></b>		
V-98 Louisa County – local farms	Edible Vegetation	2x per year

## Sampling Locations - Babcock & Wilcox

SAMPLE	LOCATION	TYPE	FREQUENCY
<b><u>AIR</u></b>			
A-101	Eastern Site Boundary Ball field	Air Particulate	Quarterly
<b><u>SURFACE WATER</u></b>			
W-101	Eastern Site Boundary Ball field	Surface Water	Annually
W-102A	James River Riverside Park	Surface Water	Annually
<b><u>SOIL</u></b>			
S-101	Eastern Site Boundary Ball field	Soil	Annually
S-102A	James River Riverside Park	Soil	Annually
<b><u>VEGETATION</u></b>			
V-101	Eastern Site Boundary Ball field	Grass	Annually
V-102	James River Riverside Park	Grass	Annually

## Other Sampling Locations in Virginia

	LOCATION	TYPE	FREQUENCY
<b><u>Air</u></b>			
	<i>Control/naturally occurring background</i>		
A-40	Pocahontas State Park	Air Particulate	Weekly
<b><u>Charcoal Filter</u></b>			
	<i>Control/naturally occurring background</i>		
C-40	Pocahontas State Park	Air Particulate	Weekly
<b><u>Dosimeters</u></b>			
	<i>Control/naturally occurring background</i>		
D-40	Pocahontas State Park	Air Gamma	Quarterly
<b><u>Silt</u></b>			
S-15	James River - NNSB - Pier 1	Silt	Quarterly
S-16	James River - NNSB- Shipway 11	Silt	Quarterly
S-18	Elizabeth River - NNSY - Drydock #8	Silt	Quarterly
S-19	Elizabeth River - NNSY - Drydock #4	Silt	Quarterly
S-20	Elizabeth River - NNSY - Wet Slip #1	Silt	Quarterly
<b><u>Surface Water</u></b>			
W-15	James River - NNSB- Pier 1	Surface Water	Quarterly
W-16	James River - NNSB- Shipway 11	Surface Water	Quarterly
W-37	Elizabeth River - NNSY - Drydock #8	Surface Water	Quarterly
W-38	Elizabeth River - NNSY - Drydock #4	Surface Water	Quarterly
W-39	Elizabeth River - NNSY - Wet Slip #1	Surface Water	Quarterly

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MINIMUM  
DETECTABLE  
ACTIVITY  
"MDA"

Minimum Detectable Activity (MDA), as used in this report, is defined as the lowest level of radioactivity that can be consistently and accurately detected in a given sample.

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# Analytical Results



# Virginia Department of Health

## AIR PARTICULATE

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

Location: Pocahontas State Park (Control)

Week #	Station	Date			Gross Beta Activity		
		Start		Stop	pCi/meter <sup>3</sup>		
27 <sup>1</sup>	A-40	6/27/16	-	7/4/16	+/-		
28 <sup>2</sup>	A-40	7/4/16	-	7/11/16	0.06	+/-	0.01
29	A-40	7/11/16	-	7/18/16	0.04	+/-	0.007
30	A-40	7/18/16	-	7/25/16	0.11	+/-	0.01
31	A-40	7/25/16	-	8/1/16	0.05	+/-	0.007
32	A-40	8/1/16	-	8/8/16	0.09	+/-	0.01
33 <sup>3</sup>	A-40	8/8/16	-	8/15/16	+/-		
34	A-40	8/15/16	-	8/22/16	0.05	+/-	0.01
35	A-40	8/22/16	-	8/29/16	0.06	+/-	0.009
36	A-40	8/29/16	-	9/5/16	0.10	+/-	0.01
37 <sup>4</sup>	A-40	9/5/16	-	9/12/16	+/-		
38	A-40	9/05/16	-	9/19/16	0.05	+/-	0.006
39	A-40	9/19/16	-	9/26/16	0.07	+/-	0.01

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Due to mobile laboratory repairs, sample collection times were extended to 2 weeks.

<sup>3</sup> Staff participated in VDOT exercise / training. No samples collected.

<sup>4</sup> Mobile Incident Command Laboratory (MICL) deployed to HAZMAT Conference. No samples were collected.

# Virginia Department of Health

## AIR PARTICULATE

April 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

Location: Surry Power Station – on site

Week #	Station	Date		Stop	Gross Beta Activity		
		Start			pCi/meter <sup>3</sup>		
27 <sup>1</sup>	A-20	6/27/16	-	7/4/16	+/-		
28 <sup>2</sup>	A-20	7/4/16	-	7/11/16	0.04	+/-	0.01
29	A-20	7/11/16	-	7/18/16	0.06	+/-	0.008
30	A-20	7/18/16	-	7/25/16	0.07	+/-	0.01
31	A-20	7/25/16	-	8/1/16	0.04	+/-	0.006
32	A-20	8/1/16	-	8/8/16	0.07	+/-	0.01
33 <sup>3</sup>	A-20	8/8/16	-	8/15/16	+/-		
34	A-20	8/15/16	-	8/22/16	0.04	+/-	0.005
35	A-20	8/22/16	-	8/29/16	0.03	+/-	0.004
36	A-20	8/29/16	-	9/5/16	0.06	+/-	0.01
37 <sup>4</sup>	A-20	9/5/16	-	9/12/16	+/-		
38	A-20	9/05/16	-	9/19/16	0.04	+/-	0.005
39	A-20	9/19/16	-	9/26/16	0.05	+/-	0.006

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Due to mobile laboratory repairs, sample collection times were extended to 2 weeks.

<sup>3</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>4</sup> MICL deployed to HAZMAT Conference. No samples collected.

# Virginia Department of Health

## AIR PARTICULATE

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

Location: Jamestown State Park & Historical Site

Week #	Station	Date		Stop	Gross Beta Activity pCi/meter <sup>3</sup>		
		Start					
27 <sup>1</sup>	A-44	6/27/16	-	7/4/16		+/-	
28 <sup>2</sup>	A-44	7/4/16	-	7/11/16	0.04	+/-	0.005
29	A-44	7/11/16	-	7/18/16	0.06	+/-	0.008
30	A-44	7/18/16	-	7/25/16	0.08	+/-	0.01
31	A-44	7/25/16	-	8/1/16	0.04	+/-	0.006
32	A-44	8/1/16	-	8/8/16	0.06	+/-	0.01
33 <sup>3</sup>	A-44	8/8/16	-	8/15/16		+/-	
34	A-44	8/15/16	-	8/22/16	0.03	+/-	0.004
35	A-44	8/22/16	-	8/29/16	0.03	+/-	0.004
36	A-44	8/29/16	-	9/5/16	0.07	+/-	0.01
37 <sup>4</sup>	A-44	9/5/16	-	9/12/16		+/-	
38	A-44	9/05/16	-	9/19/16	0.04	+/-	0.005
39	A-44	9/19/16	-	9/26/16	0.04	+/-	0.005

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Due to mobile laboratory repairs, sample collection times were extended to 2 weeks.

<sup>3</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>4</sup> MICL deployed to HAZMAT Conference. No samples were collected.

# Virginia Department of Health

## AIR PARTICULATE

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

**Location: Louisa County / Bumpass Volunteer Fire Station**

Week #	Station	Date			Gross Beta Activity		
		Start	Stop		pCi/meter <sup>3</sup>		
27 <sup>1</sup>	A-86	6/27/16	-	7/4/16		+/-	
28 <sup>2</sup>	A-86	7/4/16	-	7/11/16	0.05	+/-	0.01
29	A-86	7/11/16	-	7/18/16	0.05	+/-	0.007
30	A-86	7/18/16	-	7/25/16	0.11	+/-	0.01
31	A-86	7/25/16	-	8/1/16	0.04	+/-	0.007
32	A-86	8/1/16	-	8/8/16	0.07	+/-	0.01
33 <sup>3</sup>	A-86	8/8/16	-	8/15/16		+/-	
34	A-86	8/15/16	-	8/22/16	0.06	+/-	0.01
35	A-86	8/22/16	-	8/29/16	0.06	+/-	0.008
36	A-86	8/29/16	-	9/5/16	0.13	+/-	0.02
37 <sup>4</sup>	A-86	9/5/16	-	9/12/16		+/-	
38	A-86	9/05/16	-	9/19/16	0.04	+/-	0.005
39	A-86	9/19/16	-	9/26/16	0.06	+/-	0.009

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Due to mobile laboratory repairs, sample collection times were extended to 2 weeks.

<sup>3</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>4</sup> MICL deployed to HAZMAT Conference. No samples were collected.

# Virginia Department of Health

## AIR PARTICULATE

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

**Location: Louisa County Route 700 / North Anna Power Station**

Week #	Station	Date			Gross Beta Activity		
		Start	Stop		pCi/meter <sup>3</sup>		
27 <sup>1</sup>	A-88	6/27/16	-	7/4/16		+/-	
28 <sup>2</sup>	A-88	7/4/16	-	7/11/16	0.04	+/-	0.01
29 <sup>3</sup>	A-88	7/11/16	-	7/18/16		+/-	
30 <sup>4</sup>	A-88	7/18/16	-	7/25/16		+/-	
31 <sup>5</sup>	A-88	7/25/16	-	8/1/16		+/-	
32	A-88	8/1/16	-	8/8/16	0.07	+/-	0.01
33 <sup>6</sup>	A-88	8/8/16	-	8/15/16		+/-	
34	A-88	8/15/16	-	8/22/16	0.05	+/-	0.01
35	A-88	8/22/16	-	8/29/16	0.05	+/-	0.007
36	A-88	8/29/16	-	9/5/16	0.08	+/-	0.01
37 <sup>7</sup>	A-88	9/5/16	-	9/12/16		+/-	
38	A-88	9/05/16	-	9/19/16	0.04	+/-	0.005
39	A-88	9/19/16	-	9/26/16	0.07	+/-	0.01

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Due to mobile laboratory repairs, sample collection times were extended to 2 weeks.

<sup>3</sup> Due to a power failure, no sample was collected.

<sup>4</sup> Due to a power failure, no sample was collected. The sampler was reset and restarted on 7/25/16.

<sup>5</sup> Due to continued power issues, no sample was collected.

<sup>6</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>7</sup> MICL deployed to HAZMAT Conference. No samples were collected.

# Virginia Department of Health

## AMBIENT GAMMA EXPOSURE

July 1, 2016 through September 30, 2016

### THIRD QUARTER REPORT 2016

<b>Location</b>	<b>Station</b>	<b>Net Exposure Rate mR/Std Qtr +/- 2S.D.</b>		
Pocahontas State Park (Control)	D-40	<b>44.70</b>	<b>+/-</b>	<b>13.37</b>
Surry Power Station	D-20	<b>27.07</b>	<b>+/-</b>	<b>10.41</b>
North Anna Power Station	D-35	<b>32.64</b>	<b>+/-</b>	<b>11.43</b>
Surry – Lebanon Baptist Church	D-41	<b>26.73</b>	<b>+/-</b>	<b>10.34</b>
Surry – Lawnes Creek	D-42	<b>31.19</b>	<b>+/-</b>	<b>11.17</b>
Surry – Route 628	D-43	<b>28.79</b>	<b>+/-</b>	<b>10.73</b>
Jamestown – Historical site	D-44	<b>30.38</b>	<b>+/-</b>	<b>11.02</b>
Newport News - Lee Hall	D-45	<b>35.79</b>	<b>+/-</b>	<b>11.96</b>
Louisa County - Mineral	D-50	<b>28.88</b>	<b>+/-</b>	<b>10.75</b>
Louisa County – Wares Crossroads	D-51	<b>27.90</b>	<b>+/-</b>	<b>10.56</b>
Louisa County – Good Hope Church	D-52	<b>35.46</b>	<b>+/-</b>	<b>11.91</b>
Spotsylvania Route 614	D-53	<b>28.55</b>	<b>+/-</b>	<b>10.69</b>
Louisa County – Fred Hall	D-54	<b>23.96</b>	<b>+/-</b>	<b>9.79</b>
Naval Weapons Station – 1	D-73	<b>23.58</b>	<b>+/-</b>	<b>9.71</b>
Newport News – Fort Eustis	D-76	<b>26.31</b>	<b>+/-</b>	<b>10.26</b>
Williamsburg – Busch Gardens	D-77	<b>33.31</b>	<b>+/-</b>	<b>11.54</b>
Williamsburg – Airport	D-78	<b>22.35</b>	<b>+/-</b>	<b>9.46</b>
Surry – Scotland Wharf	D-79	<b>22.62</b>	<b>+/-</b>	<b>9.51</b>
Surry – Bacon's Castle	D-80	<b>23.31</b>	<b>+/-</b>	<b>9.66</b>
Surry – Alliance	D-81	<b>27.98</b>	<b>+/-</b>	<b>10.58</b>
Surry – Hog Point	D-82	<b>24.90</b>	<b>+/-</b>	<b>9.98</b>
Louisa County – Route 685	D-84	<b>28.93</b>	<b>+/-</b>	<b>10.76</b>
Spotsylvania – Route 713	D-85	<b>28.92</b>	<b>+/-</b>	<b>10.75</b>
Louisa County – Bumpass Fire Dept.	D-86	<b>31.68</b>	<b>+/-</b>	<b>11.26</b>
Spotsylvania – Levy	D-87	<b>32.26</b>	<b>+/-</b>	<b>11.36</b>
Louisa County – Route 700	D-88	<b>34.50</b>	<b>+/-</b>	<b>11.75</b>
Louisa County – Aspen Hill	D-89	<b>27.42</b>	<b>+/-</b>	<b>10.47</b>
Radiological Health	Control 1	<b>17.31</b>	<b>+/-</b>	<b>8.32</b>
Radiological Health	Control 2	<b>16.37</b>	<b>+/-</b>	<b>8.09</b>

# Virginia Department of Health

## FISH

July 1, 2016 through September 30, 2016

### THIRD QUARTER REPORT 2016

Location Type of fish	Date Collected	Isotope	pCi/gram
Bi-Annual North Anna Discharge Canal  F-24	NA	Ba-140	
		Cs-134	
		Cs-137	
		Co-58	
		Co-60	
		I-131	
		Fe-59	
		Mn-54	
		Ru-106	
		Ag-110M	
		Zn-65	
		Nb-95	
Surry Discharge Canal F-17	NA	Ba-140	
		Cs-134	
		Cs-137	
		Co-58	
		Co-60	
		I-131	
		Fe-59	
		Mn-54	
		Ru-106	
		Ag-110M	
		Zn-65	
		Nb-95	

Note: Fish samples collected during the 2<sup>nd</sup> and 4<sup>th</sup> quarter.

# Virginia Department of Health

## SHELLFISH

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

Location			
Type of fish	Date Collected	Isotope	pCi/gram
Surry	NA	Ba-140	
Power		Cs-134	
Station		Cs-137	
		Co-58	
		Co-60	
R-17		I-131	
(Clams and Oysters)		Fe-59	
		Mn-54	
		Ru-106	
		Ag-110M	
		Zn-65	
		Nb-95	

Note: No Shellfish samples collected in 3<sup>rd</sup> Quarter.



# Virginia Department of Health

## Milk

July 1, 2016 through September 30, 2016

### THIRD QUARTER REPORT 2016

Louisa County - Lakeside Dairy M-29	
3rd Quarter Date: 7/8/16	
Isotope	Results - pCi/liter
Ba-140	<MDA
Cs-134	<MDA
Cs-137	<MDA
K-40*	1.6 +/- 0.1
I-131	<MDA
Sr-89	<MDA
Sr-90	0.83 +/- 0.51
Surry County - Epps Dairy M-66	
3rd Quarter Date: 7/7/16	
Isotope	Results - pCi/liter
Ba-140	<MDA
Cs-134	<MDA
Cs-137	<MDA
K-40*	1.5 +/- 0.1
I-131	<MDA
Sr-89	<MDA
Sr-90	1.33 +/- 0.63

\*K-40 data is reported in units of grams/liter.

# Virginia Department of Health

## Gamma & Radiogas in Air

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

Location: Pocahontas State Park (Control)

Week #	Station	Date			Cs-134 Activity pCi/meter <sup>3</sup>	Cs-137 Activity pCi/meter <sup>3</sup>	I-131 Activity pCi/meter <sup>3</sup>
		Start		Ended			
27 <sup>1</sup>	C-40	6/27/16	-	7/4/16			
28 <sup>2</sup>	C-40	7/4/16	-	7/11/16	<MDA	4.35 E -2	<MDA
29	C-40	7/11/16	-	7/18/16	<MDA	<MDA	<MDA
30	C-40	7/18/16	-	7/25/16	<MDA	<MDA	<MDA
31	C-40	7/25/16	-	8/1/16	<MDA	<MDA	<MDA
32	C-40	8/1/16	-	8/8/16	<MDA	<MDA	<MDA
33 <sup>3</sup>	C-40	8/8/16	-	8/15/16			
34	C-40	8/15/16	-	8/22/16	<MDA	<MDA	<MDA
35	C-40	8/22/16	-	8/29/16	<MDA	<MDA	<MDA
36	C-40	8/29/16	-	9/5/16	<MDA	<MDA	<MDA
37 <sup>4</sup>	C-40	9/5/16	-	9/12/16			
38	C-40	9/12/16	-	9/19/16	<MDA	<MDA	<MDA
39	C-40	9/19/16	-	9/26/16	<MDA	<MDA	<MDA

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Due to mobile laboratory repairs, sample collection times were extended to 2 weeks.

<sup>3</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>4</sup> MICL deployed to HAZMAT Conference. No samples were collected.

# Virginia Department of Health

## Gamma & Radiogas in Air

July 1, 2016 through September 30, 2016

### THIRD QUARTER REPORT 2016

Location: Surry Power Station – on site

Week #	Station	Date		Cs-134 Activity pCi/meter <sup>3</sup>	Cs-137 Activity pCi/meter <sup>3</sup>	I-131 Activity pCi/meter <sup>3</sup>
		Start	Ended			
27 <sup>1</sup>	C-20	6/27/16	- 7/4/16			
28 <sup>2</sup>	C-20	7/4/16	- 7/11/16	<MDA	<MDA	<MDA
29	C-20	7/11/16	- 7/18/16	<MDA	<MDA	<MDA
30	C-20	7/18/16	- 7/25/16	<MDA	<MDA	<MDA
31	C-20	7/25/16	- 8/1/16	<MDA	<MDA	<MDA
32	C-20	8/1/16	- 8/8/16	<MDA	<MDA	<MDA
33 <sup>3</sup>	C-20	8/8/16	- 8/15/16			
34	C-20	8/15/16	- 8/22/16	<MDA	<MDA	<MDA
35	C-20	8/22/16	- 8/29/16	<MDA	<MDA	<MDA
36	C-20	8/29/16	- 9/5/16	<MDA	<MDA	<MDA
37 <sup>4</sup>	C-20	9/5/16	- 9/12/16			
38	C-20	9/12/16	- 9/19/16	<MDA	<MDA	<MDA
39	C-20	9/19/16	- 9/26/16	<MDA	<MDA	<MDA

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Due to mobile laboratory repairs, sample collection times were extended to 2 weeks.

<sup>3</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>4</sup> MICL deployed to HAZMAT Conference. No samples were collected.

# Virginia Department of Health

## Gamma & Radiogas in Air

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

Location: Jamestown State Park & Historical Site

Week #	Station	Date			Cs-134 Activity pCi/meter <sup>3</sup>	Cs-137 Activity pCi/meter <sup>3</sup>	I-131 Activity pCi/meter <sup>3</sup>
		Start		Ended			
27 <sup>1</sup>	C-44	6/27/16	-	7/4/16			
28 <sup>2</sup>	C-44	7/4/16	-	7/11/16	<MDA	<MDA	<MDA
29	C-44	7/11/16	-	7/18/16	<MDA	<MDA	<MDA
30	C-44	7/18/16	-	7/25/16	<MDA	<MDA	<MDA
31	C-44	7/25/16	-	8/1/16	<MDA	<MDA	<MDA
32	C-44	8/1/16	-	8/8/16	<MDA	<MDA	<MDA
33 <sup>3</sup>	C-44	8/8/16	-	8/15/16			
34	C-44	8/15/16	-	8/22/16	<MDA	<MDA	<MDA
35	C-44	8/22/16	-	8/29/16	<MDA	<MDA	<MDA
36	C-44	8/29/16	-	9/5/16	<MDA	<MDA	<MDA
37 <sup>4</sup>	C-44	9/5/16	-	9/12/16			
38	C-44	9/12/16	-	9/19/16	<MDA	<MDA	<MDA
39	C-44	9/19/16	-	9/26/16	5.65 E-02	<MDA	<MDA

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Due to mobile laboratory repairs, sample collection times were extended to 2 weeks.

<sup>3</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>4</sup> MICL deployed to HAZMAT Conference. No samples were collected.

# Virginia Department of Health

## Gamma & Radiogas in Air

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

**Location: Louisa County / Bumpass Volunteer Fire Station**

Week #	Station	Date		Cs-134 Activity pCi/meter <sup>3</sup>	Cs-137 Activity pCi/meter <sup>3</sup>	I-131 Activity pCi/meter <sup>3</sup>
		Start	Ended			
27 <sup>1</sup>	C-86	6/27/16	- 7/4/16			
28 <sup>2</sup>	C-86	7/4/16	- 7/11/16	<MDA	<MDA	<MDA
29	C-86	7/11/16	- 7/18/16	<MDA	<MDA	<MDA
30	C-86	7/18/16	- 7/25/16	<MDA	<MDA	<MDA
31	C-86	7/25/16	- 8/1/16	<MDA	<MDA	<MDA
32	C-86	8/1/16	- 8/8/16	<MDA	<MDA	<MDA
33 <sup>3</sup>	C-86	8/8/16	- 8/15/16			
34	C-86	8/15/16	- 8/22/16	<MDA	<MDA	<MDA
35	C-86	8/22/16	- 8/29/16	<MDA	<MDA	<MDA
36	C-86	8/29/16	- 9/5/16	<MDA	<MDA	<MDA
37 <sup>4</sup>	C-86	9/5/16	- 9/12/16			
38	C-86	9/12/16	- 9/19/16	3.59 E-02	<MDA	<MDA
39	C-86	9/19/16	- 9/26/16	<MDA	<MDA	<MDA

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Due to mobile laboratory repairs, sample collection times were extended to 2 weeks.

<sup>3</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>4</sup> MICL deployed to HAZMAT Conference. No samples were collected.

# Virginia Department of Health

## Gamma & Radiogas in Air

July 1, 2016 through September 30, 2016

### THIRD QUARTER REPORT 2016

**Location: Louisa County Route 700 / North Anna Power Station**

Week #	Station	Date		Cs-134 Activity pCi/meter <sup>3</sup>	Cs-137 Activity pCi/meter <sup>3</sup>	I-131 Activity pCi/meter <sup>3</sup>
		Start	Ended			
27 <sup>1</sup>	C-88	6/27/16	- 7/4/16			
28 <sup>2</sup>	C-88	7/4/16	- 7/11/16	<MDA	<MDA	<MDA
29 <sup>3</sup>	C-88	7/11/16	- 7/18/16			
30 <sup>4</sup>	C-88	7/18/16	- 7/25/16			
31 <sup>5</sup>	C-88	7/25/16	- 8/1/16			
32	C-88	8/1/16	- 8/8/16	<MDA	<MDA	<MDA
33 <sup>6</sup>	C-88	8/8/16	- 8/15/16			
34	C-88	8/15/16	- 8/22/16	<MDA	<MDA	<MDA
35	C-88	8/22/16	- 8/29/16	<MDA	<MDA	<MDA
36	C-88	8/29/16	- 9/5/16	<MDA	<MDA	<MDA
37 <sup>7</sup>	C-88	9/5/16	- 9/12/16			
38	C-88	9/12/16	- 9/19/16	<MDA	<MDA	<MDA
39	C-88	9/19/16	- 9/26/16	<MDA	<MDA	<MDA

<sup>1</sup> Due to mobile laboratory repairs no samples were collected

<sup>2</sup> Due to mobile laboratory repairs, sample collection times were extended to 2 weeks.

<sup>3</sup> Due to a power failure, no sample was collected.

<sup>4</sup> Due to a power failure, no sample was collected. The sampler was reset and restarted on 7/25/16.

<sup>5</sup> Due to continued power failure, no sample was collected.

<sup>6</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>7</sup> MICL deployed to HAZMAT Conference. No samples were collected.

## Virginia Department of Health

### Silt

July 1, 2016 through September 30, 2016

#### THIRD QUARTER REPORT 2016

Location	Date collected	Gross Beta pCi/gram of Silt
James River Pier 1 Newport News Shipyard S-15	08/11/16	32.7 +/- 5.3 pCi/g
James River Shipway 11 Newport News Shipyard S-16	08/11/16	16.9 ± 4.1 pCi/g

# Virginia Department of Health

## Silt

July 1, 2016 through September 30, 2016

### THIRD QUARTER REPORT 2016

Elizabeth River – Dry Dock #8 Norfolk Naval Shipyard S-18							
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Quarter	Date collected	Gamma Activity – pCi/gram (wet)				Gross Beta pCi/gram (DRY)	Gross Alpha pCi/gram (DRY)
		Cs-134	Cs-137	Co-58	Co-60		
3rd	08/11/16	<MDA	0.02 ± 0.01 pCi/g	<MDA	<MDA	30 ± 5.1 pCi/g	19 ± 9 pCi/g

Elizabeth River – Dry Dock #4 Norfolk Naval Shipyard S-19							
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Quarter	Date collected	Gamma Activity – pCi/gram (wet)				Gross Beta pCi/gram (DRY)	Gross Alpha pCi/gram (DRY)
		Cs-134	Cs-137	Co-58	Co-60		
3rd	08/11/16	<MDA	0.03 ± 0.01 pCi/g	<MDA	<MDA	38 ± 5.8 pCi/g	35 ± 11 pCi/g

Elizabeth River – Wet slip #1 Norfolk Naval Shipyard S-20							
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Quarter	Date collected	Gamma Activity – pCi/gram (wet)				Gross Beta pCi/gram (DRY)	Gross Alpha pCi/gram (DRY)
		Cs-134	Cs-137	Co-58	Co-60		
3rd	08/11/16	<MDA	0.03 ± 0.01 pCi/g	<MDA	<MDA	14.2 ± 3.8 pCi/g	9.1 ± 4.3 pCi/g



# Virginia Department of Health

## Silt

July 1, 2016 through September 30, 2016

### THIRD QUARTER REPORT 2016

#### James River – Surry Power Station Discharge Canal S-17

Quarter	Date collected	Gamma Activity – pCi/gram (wet)				Gross Beta pCi/gram (DRY)
		Cs-134	Cs-137	Co-58	Co-60	
3rd	08/09/2016	<MDA	<MDA	<MDA	<MDA	6.7 ± 3.1 pCi/g

#### North Anna Power Waste Treatment S-24

Quarter	Date collected	Gamma Activity – pCi/gram (wet)				Gross Beta pCi/gram (DRY)
		Cs-134	Cs-137	Co-58	Co-60	
3rd	N/A					

**N/A:** Sample was not collected this quarter.

Virginia Department of Health

**SURFACE WATER**

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

<p align="center"><b>James River – Pier 1 Newport News Shipyard W-15A</b></p>
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Qtr	Date collected	Gamma Activity – pCi/liter						Gross Beta pCi/liter
		Ba-140	Cs-137	I-131	Mn-54	Zn-65	Zr95/Nb95	
3rd	8/11/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	123.5 +/- 13.9

<p align="center"><b>James River – Shipway #11 Newport News Shipyard W-16</b></p>
---

Qtr	Date collected	Gamma Activity – pCi/liter						Gross Beta pCi/liter
		Ba-140	Cs-137	I-131	Mn-54	Zn-65	Zr95/Nb95	
3rd	8/11/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	167.2 +/- 17.8

Virginia Department of Health

**SURFACE WATER**

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

**Elizabeth River – Dry Dock #4  
Norfolk Naval Shipyard W-37**

Qtr	Date collected	Gamma Activity – pCi/liter						Gross Beta	Gross Alpha
		Ba-140	Cs-137	I-131	Mn-54	Zn-65	Zr95/Nb95		
3rd	8/11/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	185.4 ± 25.3 pCi/L	<MDA

**Elizabeth River – Wet Slip #1  
Norfolk Naval Shipyard W-38**

Qtr	Date collected	Gamma Activity – pCi/liter						Gross Beta	Gross Alpha
		Ba-140	Cs-137	I-131	Mn-54	Zn-65	Zr95/Nb95		
3rd	8/11/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	172.1 ± 25 pCi/L	<MDA

**Elizabeth River – Dry Dock #8  
Norfolk Naval Shipyard W-39**

Qtr	Date collected	Gamma Activity – pCi/liter						Gross Beta	Gross Alpha
		Ba-140	Cs-137	I-131	Mn-54	Zn-65	Zr95/Nb95		
3rd	8/11/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	181.5 ± 26.1 pCi/L	<MDA

# Virginia Department of Health

## SURFACE WATER

July 1, 2016 through September 30, 2016

### Surry Power Station – Discharge Canal - W-19 Gamma, Beta, and Tritium Activity – pCi/liter

Date	Ba-140	Cs-134	Cs-137	Co-58	Co-60	I-131	Mn-54	Zn-65	Zr/Nb 95	Gross Beta	H3 Activity
7/4/16 <sup>1</sup>											
7/11/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		676 +/- 52
7/18/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		676 +/- 52
7/25/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		450 +/- 42
8/1/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		225 +/- 30
8/8/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		450 +/- 43
8/8/16D	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	61.6 +/- 10.1	
8/15/16 <sup>2</sup>											
8/22/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		<MDA
8/29/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		150 +/- 30
9/6/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		751 +/- 52
9/12/16 <sup>3</sup>											
9/19/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		150 +/- 30
9/26/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		976 +/- 60

D = sample analyzed by DCLS

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>3</sup> MICL deployed to HAZMAT Conference. No samples were collected.

# Virginia Department of Health

## SURFACE WATER

July 1, 2016 through September 30, 2016

### North Anna River @ Rt. 522 - W-27 Gamma, Beta and Tritium Activity – pCi/liter

Date	Ba-140	Cs-134	Cs-137	Co-58	Co-60	I-131	Mn-54	Zn-65	Zr/Nb 95	Gross Beta	H3 Activity
7/4/16 <sup>1</sup>											
7/11/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	1.24E+1		1727 +/- 85
7/18/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		2928 +/- 108
7/25/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		2177 +/- 95
8/1/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		2252 +/- 95
8/8/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		2327 +/- 95
8/8/16D	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	3.1 +/- 1	
8/15/16 <sup>2</sup>											
8/22/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		1426 +/- 80
8/29/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		1952 +/- 91
9/6/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		1727 +/- 85
9/12/16 <sup>3</sup>											
9/19/16	<MDA	<MDA	<MDA	<MDA	<MDA	11.6	<MDA	<MDA	<MDA		2177 +/- 95
9/26/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		3228 +/- 113

D = sample analyzed by DCLS

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>3</sup> MICL deployed to HAZMAT Conference. No samples were collected.

Virginia Department of Health

**SURFACE WATER**

July 1, 2016 through September 30, 2016

**North Anna River @ Rt. 651/Control - W-28**  
Gamma, Beta and Tritium Activity – pCi/liter

Date	Ba-140	Cs-134	Cs-137	Co-58	Co-60	I-131	Mn-54	Zn-65	Zr/Nb 95	Gross Beta	H3 Activity
7/4/16 <sup>1</sup>											
7/11/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		<MDA
7/18/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		526 +/- 43
7/25/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		<MDA
8/1/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		225 +/- 30
8/8/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		150 +/- 30
8/8/16D	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A	2.2 +/- 1	
8/15/16 <sup>2</sup>											
8/22/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		300 +/- 30
8/29/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		150 +/- 30
9/6/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		225 +/- 30
9/12/16 <sup>3</sup>											
9/19/16	<MDA	<MDA	<MDA	< M D A	< M D A	< M D A	<MDA	<MDA	< M D A		826 +/- 60
9/26/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		150 +/- 30

D = sample analyzed by DCLS

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>3</sup> MICL deployed to HAZMAT Conference. No samples were collected.

# Virginia Department of Health

## SURFACE WATER

July 1, 2016 through September 30, 2016

### North Anna Power Station – Discharge Canal - W-33 Gamma, Beta and Tritium Activity – pCi/liter

Date	Ba-140	Cs-134	Cs-137	Co-58	Co-60	I-131	Mn-54	Zn-65	Zr/Nb 95	Gross Beta	H3 Activity
7/4/16 <sup>1</sup>											
7/11/16	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	4354 +/- 135	
7/18/16	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	3679 +/- 128	
7/25/16	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	3979 +/- 127	
8/1/16	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	4429 +/- 134	
8/8/16	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	5631 +/- 151	
8/8/16D	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	1.7 +/- 0.8	
8/15/16 <sup>2</sup>											
8/22/16 <sup>3</sup>	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	9084 +/- 193	
8/29/16	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	6006 +/- 160	
9/6/16 <sup>4</sup>	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	7282 +/- 176	
9/12/16 <sup>5</sup>											
9/19/16	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	5255 +/- 148	
9/26/16	<MDA	<MDA	<MDA	< M D A	<MDA	<MDA	<MDA	<MDA	<MDA	6306 +/- 160	

D = sample analyzed by DCLS

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>3</sup> Initial tritium results yielded 7658 +/- 185 pCi/L. This indicated a release may have occurred. The sample was analyzed again with 2 new aliquots and yielded 9084 +/- 193 pCi/L. North Anna Power Station was notified and they confirmed that a release had occurred during the sample collection period.

<sup>4</sup> Based on sample results a release may have occurred during the sample collection period. 2 new aliquots were analyzed and results were similar to the above listed results. Ongoing releases to the discharge canal are expected as North Anna Power Station is preparing for a refueling outage this fall.

<sup>5</sup> MICL deployed to HAZMAT Conference. No samples were collected.

Virginia Department of Health

**SURFACE WATER**

July 1, 2016 through September 30, 2016

**James River @ Scotland Wharf - W-79**  
Gamma, Beta and Tritium Activity – pCi/liter

Date	Ba-140	Cs-134	Cs-137	Co-58	Co-60	I-131	Mn-54	Zn-65	Zr/Nb 95	Gross Beta	H3 Activity
7/4/16 <sup>1</sup>											
7/11/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		<MDA
7/18/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		751 +/- 60
7/25/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		150 +/- 30
8/1/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		<MDA
8/8/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		150 +/- 30
8/8/16D	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A	14.1 +/- 2	
8/15/16 <sup>2</sup>											
8/22/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		225 +/- 30
8/29/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		<MDA
9/6/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		300 +/- 30
9/12/16 <sup>3</sup>											
9/19/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		<MDA
9/26/16	<MDA	<MDA	<MDA	< M D A	< M D A	<MDA	<MDA	<MDA	< M D A		150 +/- 30

D = sample analyzed by DCLS

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>3</sup> MICL deployed to HAZMAT Conference. No samples were collected.



# Virginia Department of Health

## SURFACE WATER

July 1, 2016 through September 30, 2016

### Surry Power Station - James River @ Robious Landing-W-90

Gamma, Beta and Tritium Activity – pCi/liter

Date	Ba-140	Cs-134	Cs-137	Co-58	Co-60	I-131	Mn-54	Zn-65	Zr/Nb 95	Gross Beta	H3 Activity
7/4/16 <sup>1</sup>											
7/11/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		<MDA
7/18/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		225 +/- 30
7/25/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		<MDA
8/1/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		150 +/- 30
8/8/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		300 +/- 30
8/8/16D	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	2.3 +/- 0.8	
8/15/16 <sup>2</sup>											
8/22/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		150 +/- 30
8/29/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		<MDA
9/6/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		<MDA
9/12/16 <sup>3</sup>											
9/19/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		526 +/- 43
9/26/16	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA		150 +/- 30

D = Sample analyzed by DCLS

<sup>1</sup> Due to mobile laboratory repairs no samples were collected.

<sup>2</sup> Staff participated in VDOT exercise / training. No samples were collected.

<sup>3</sup> MICL deployed to HAZMAT Conference. No samples were collected.

Virginia Department of Health

VEGETATION

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

Location	Date collected	Type	Isotope	Results pCi/Gram (wet weight)
Surry County Private garden V-96	9/6/16	Vegetation	I-131 Cs-134 Cs-137	<MDA <MDA <MDA
Louisa County Private Farm V-98	9/6/16	Sweet Potato Leaves	I-131 Cs-134 Cs-137	<MDA <MDA <MDA

# COMMONWEALTH OF VIRGINIA

## DEPARTMENT OF HEALTH

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### OFFICE OF RADIOLOGICAL HEALTH

109 Governor Street, 7<sup>th</sup> Floor, Richmond, Virginia 23218-2448

Office (804) 864-8150

Fax (804) 864-8175

# BABCOCK & WILCOX

Virginia Department of Health

Babcock & Wilcox

**AIR PARTICULATE COMPOSITE SAMPLES**

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

Eastern Site Boundary – Ball field <b>A-101</b>						
Quarter	Start	Date		Stop	Gross Alpha Activity	
					pCi/meter <sup>3</sup>	
3rd	7/6/16	-		7/12/16	0.001	+/- 0.0004

**SOIL**

July 1, 2016 through September 30, 2016

THIRD QUARTER REPORT 2016

Location	Date	Distance & Direction	Type	Alpha Activity
				pCi/gram
Eastern Site Boundary Ball field <b>S-101</b>		Site Boundary	Soil	N/A
James River Shoreline Near Six Mile Bridge "control" <b>S-102a</b>		1.5 miles SW	Soil	N/A

Note: Uranium separation followed by alpha counting.

N/A: No sample collected this quarter

## Virginia Department of Health

### Babcock & Wilcox

## SURFACE WATER

July 1, 2016 through September 30, 2016

### THIRD QUARTER REPORT 2016

Location	Date	Distance & Direction	Alpha Activity pCi/gram
James River Shoreline Near Ball field at eastern site boundary W-101		Approx. 3 miles downstream	N/A
James River Shoreline Near Six Mile Bridge "control" W-102		Approx 1.5 Miles upstream	N/A

N/A: No sample collected this quarter

## VEGETATION

July 1, 2016 through September 30, 2016

### THIRD QUARTER REPORT 2016

Location	Date	Type	Distance & Direction	Alpha Activity pCi/gram
Eastern site boundary Ball field V-101		Vegetation	Approx. 3 miles downstream	N/A
James River Shoreline off Rt. 460 "control" V-102		Vegetation	Approx 4.5 Miles SW	N/A

Note: Uranium separation followed by alpha counting.

N/A: No sample collected this quarter

COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF HEALTH

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OFFICE OF RADIOLOGICAL HEALTH  
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EMERGENCY  
PREPAREDNESS

# EMERGENCY PREPAREDNESS

The Office of Radiological Health (ORH) located within the Virginia Department of Health (VDH) is one of the lead response agencies for emergencies involving the potential or actual release of radioactive materials. Overall, state level emergency response is described in the Commonwealth of Virginia Radiological Emergency Response Plan (COVERERP), which is developed and maintained by the Virginia Department of Emergency Management (VDEM). In addition to generic guidelines for responding to any major radiological emergency, the response procedures contain segments addressing response to several specific types of radiological incidents. This includes sections which provide information needed for response to Licensee and Transportation accidents. Other sections contain background information and response guidance for accidents at fixed nuclear facilities. Plans are also being developed to respond to possible radiological terrorist attacks, which may include detonation of a radiological dispersion device (RDD aka “dirty bomb”), an improvised nuclear device (IND), or a military grade nuclear warhead.

When responding to any radiological emergency, the primary tasks of the Office of Radiological Health are to locate, identify, and predict the impact of any radioactive materials released to the environment. Based on the predicted or known impact, ORH then recommends appropriate measures to protect the public. ORH would also be tasked with helping to supervise the cleanup of radiological contamination and ensuring the proper disposal of radioactive waste. An ORH duty officer maintains 24-hour coverage to provide initial assessment/assistance for local responders and may also initiate the mobilization/deployment of other trained staff to respond to a radiological emergency when needed.

Under the provisions of current Federal Emergency Management Agency (FEMA) regulations, ORH conducts or participates in periodic drills that are designed to provide team training and to test emergency plans and procedures. The scope of these drills ranges from receiving and acknowledging simulated emergency communications to full-scale team deployment.

Federal regulations for commercial nuclear power generating facilities stipulate that a full-scale exercise involving appropriate local government participation and testing all significant response elements must be conducted and evaluated every other year. Because there are two such facilities, Surry and North Anna Nuclear Power Stations, Commonwealth of Virginia agencies will perform exercise activities on a yearly basis, alternating between the sites each year.